In the Claims:

Claims **1 to 10** (Canceled).

11. (Previously presented) A sensor transponder (1) with a facility for transmitting measurement data from a tire (9) to a receiving facility and at least one acceleration sensor, characterized in that the sensor transponder (1) is fitted on an inner side of the running surface (2) of the tire (9).

12. (Previously presented) The sensor transponder (1) according to claim 11, characterized in that as a receiving facility, a receiving antenna is fitted, which is preferably arranged in a vehicle.

13. (Previously presented) The sensor transponder (1) according to claim 12, characterized in that the receiving antenna is also designed as a transmitting antenna.

14. (Previously presented) The sensor transponder (1) according to claim 11, characterized in that the sensor transponder (1) comprises a memory for tire-specific parameters.

15. (Previously presented) The sensor transponder (1) according to claim 11, characterized in that the sensor transponder (1) comprises at least one pressure sensor.

16. (Previously presented) The sensor transponder (1) according to claim 11, characterized in that the sensor transponder (1) comprises at least one temperature sensor.

17. (Previously presented) The sensor transponder (1) according to claim 11, characterized in that a central unit is fitted and the evaluation of the signals from the sensor transponder (1) is conducted in the central unit.

18. (Previously presented) A procedure for calculating a tire contact length (6), whereby a sensor transponder (1) is fitted with at least one acceleration sensor arranged on the inner side of a running surface (2) of a tire (9), the signals from the acceleration sensor are compared with threshold values and are then integrated, and the tire contact length (6) is calculated independently of the velocity using quotient formation.

19. (Previously presented) The procedure according to claim 18, characterized in that the tire contact area (tread) is calculated from the tire contact length (6) using tire-specific parameters.

20. (Previously presented) The procedure according to claim 19, characterized in that the wheel load is calculated using the tire contact area and the tire pressure.

21. (New) An apparatus for acquiring measured data from a tire of a vehicle, comprising:

a receiver arrangement;

a transponder that is adapted to transmit measured data comprising acceleration data to said receiver arrangement; and

an acceleration sensor that is mounted on an inner side of a running surface of the tire of the vehicle and that is arranged and adapted to measure and provide the acceleration data to said transponder.

22. (New) The apparatus according to claim 21, wherein said transponder is mounted on the inner side of the running surface of the tire, and wherein said transponder and said acceleration sensor are combined together to form a sensor transponder unit.

23. (New) The apparatus according to claim 22, wherein said sensor transponder unit further comprises a memory that stores tire-specific parameters characterizing the tire and that is connected to said transponder.

24. (New) The apparatus according to claim 22, wherein said sensor transponder unit further comprises a pressure sensor that is arranged and adapted to measure an air pressure in the tire and to provide corresponding pressure data as part of said measured data to said transponder.

25. (New) The apparatus according to claim 22, wherein said sensor transponder unit further comprises a temperature sensor that is arranged and adapted to measure a temperature in the tire and to provide corresponding temperature data as part of said measured data to said transponder.

26. (New) The apparatus according to claim 21, wherein said receiver arrangement comprises a receiving antenna arranged in the vehicle.

27. (New) The apparatus according to claim 26, further comprising a transmitter arrangement connected to said receiving antenna which is further designed and adapted as a transmitting antenna.

28. (New) The apparatus according to claim 21, further comprising a central unit that comprises an evaluation unit arranged in the vehicle and connected to said receiver arrangement, wherein said evaluation unit is adapted to evaluate and process the measured data.

29. (New) The apparatus according to claim 28, wherein said evaluation unit comprises a comparator and an integrator, wherein said comparator has an input connected to said receiver arrangement so as to receive the measured data and has an output connected to said integrator.

30. (New) The apparatus according to claim 21, wherein said acceleration sensor comprises a DC-compatible acceleration sensor with low pass behavior.

31. (New) The apparatus according to claim 21, wherein said acceleration sensor comprises a non-DC-compatible acceleration sensor with differentiating behavior.

32. (New) A method of using the apparatus according to claim 29 to calculate at least a tire contact length of the tire of the vehicle, comprising the steps:

a) as the tire rotates, measuring said acceleration data of the tire using said acceleration sensor;

b) using said transponder transmitting said measured data comprising said acceleration data to said receiver arrangement, and providing said measured data from said receiver arrangement to said central unit;

c) in said evaluation unit evaluating said acceleration data to determine therefrom a first result dependent on a duration of said acceleration sensor passing through said tire contact length during one rotation of the tire and a second result indicative of a duration of said one rotation of the tire, wherein said evaluating comprises comparing said acceleration data to a threshold using said comparator and controlling said integrator with an output signal of said comparator; and

d) forming a quotient of said first result relative to said second result to determine said tire contact length relative to a circumference of the tire and independent of a tire rotation speed of the rotation of the tire.

33. (New) The method according to claim 32, further comprising a step of calculating a tire contact area of the tire from said tire contact length and at least one tire-specific parameter of the tire.

34. (New) The method according to claim 33, wherein said sensor transponder unit further comprises a pressure sensor that is arranged and adapted to measure an air pressure in the tire and to provide corresponding pressure data as part of said measured data to said transponder, wherein said method further comprises a step of calculating a wheel load of the tire from at least said tire contact area and said pressure data.

[RESPONSE CONTINUES ON NEXT PAGE]